

USSR

UDC 621.43.011:533+621.5.533

STOLER, V. D., BIKMULLIN, R. R.

"A Hollow Circular Jet with Central Distributed Flow"

Tr. Tsentr. N.-i. i Proyekt.-Konstrukt. In-ta Profilakt. Pnevmoniozov i Tekhn. Bezopasn. [Works of Central Scientific Research and Planning-Design Institute for Prevention of Pneumoconioses and Safety Techniques], No 4, 1971, pp 47-58, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B390 by Yu. F. Dityakin).

Translation: Results are presented from a mathematical study of the characteristics of a hollow circular jet when air is injected into its central portion (for example through a perforated wall). This injection may weaken or eliminate deflection of the axis of the circular jet from its initial direction. It is assumed in the calculation plan that the internal portion of the circular stream can be looked upon as developing in an even codirectional flow. A condition is determined, fulfillment of which prevents deformation of the axis of the circular stream. This condition is produced from the equations for flow rate and conservation of momentum. A formula is produced for calculation of the initial velocity of the stream, necessary to supply the internal part of the circular jet. Relationships are concluded for calculation of the parameters of the hollow jet with air injection into the central portion.

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UNCLASSIFIED
TITLE--X RAY INVESTIGATION OF POLYBENZYL AND NICKEL IRRADIATED WITH HELIUM
ICN -L- PROCESSING DATE--17JUL76
AUTHOR--BIKEV, V.P., ZECRVTSEVA, G.C., TREYAN, V.A., KHAYMOVICH, V.S.
COUNTRY OF INFO--USSR
SOURCE--UKRAINSKIY FIZICHESKIY ZHURNAL, VOL 15, JAN. 1970, P 135-138
DATE PUBLISHED-----76
SUBJECT AREAS--PHYSICS
TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, POLYBENZYL, NICKEL, ICN
SCATTERING, CRYSTAL LATTICE DEFORMATION, ALLOY ANNEALING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FRAME--1976/2000 STEP AC--02/0135/70/0135/000/0135/0135
CIRC ACCESSION AC--AF0046689
UNCLASSIFIED

Acc. Nr:

AP0046689

Abstracting Service: S/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0185

A70-23197 # X-ray investigation of molybdenum and nickel irradiated with helium ions (Rentgenografichne doslidzhennia molibdenu ta nikeliu, oprōminenikh ionami geliu). V. M. Bikov, G. G. Zdorovtseva, V. A. Troian, and V. S. Khaimovich (Moskovskii Inzhenerno-Fizicheskii Institut, Obninsk, USSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 135-138. 5 refs. In Ukrainian.

Investigation of the changes in polycrystalline Mo and Ni specimens caused by He ion bombardment with an energy of 60 keV (irradiation dose of 10 to the 15th to 10 to the 20th particles). The D-pattern of the irradiated specimens proved to be essentially different from that for reference specimens, some lines being split. These changes depend upon the integral irradiation dose. It appears to result from the tetragonal distortion of the lattice form. The changes decrease in annealing and disappear completely at a temperature of about 400 C.

(Author)

ALS

REEL/FRAME
19782005

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Acc. Nr:

AP0052526

Abstracting Service:
CHEMICAL ABST. 5-7c

Ref. Code:

UR0459

101173a Reasons for the discoloration of aromatic polyimides. Bikson, B. R.; Freimanis, J. (Inst. Org. Sin., Riga, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 69-73 (Russ). Several aromatic polyimides derived from 1,2,4,5-benzenetetracarboxylic acid (I), 3,4,3',4'-biphenyltetracarboxylic acid, and 3,3',4,4'-diphenyl oxide tetracarboxylic acid (II) with aromatic diamines were studied by spectrophotometry in order to evaluate the relation between the structure of the polymers and their discoloration. Of the polyimides studied, the most discolored was the I-benzidine copolymer. The discoloration increased with decreased conjugation in the carbonyl part of the polymer. Further studies with the *p*-anisylimide of I and the corresponding bisimide of II suggested that discoloration was due to the structure of the polymer chain, with the optical d. being markedly dependent on the structure of the anhydride and conjugation. Introduction of O bridges lowered the polymer thermal stability and improved the optical properties. A route to polyimides having a good combination of thermal stability and mech. and optical properties was discussed.

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REEL/FRAME
19821169

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B Free Radicals

USSR

UDC: 541.151.5:541.141.4

BIATIMIROV, R. S. and KONDRAT'YEV, YU. A.

"Free Radicals in Polyamides Irradiated with Fast Neutrons"

Moscow, Khimiya Vysokokikh Energiy, Vol 4, No 2, p 169

Abstract: The EPR method was used to study the free radicals formed during radiolysis of ξ -caprolactam, caprone, and the lithium and sodium caprolones of polyamide resin 68. In the case of ξ -caprolactam, radicals of structure $\sim\text{CH}_2\text{--CO--NH--CH--CH}_2\sim$ were formed; these yielded EPR spectra of four hyperfine lines, each apparently split into two components. The spectra of the other substances consisted of six hyperfine lines. It was shown that resolution of the spectral lines, and also intensity of the components, depend both upon temperature of the recording and upon degree of crystallinity of the polymer.

*Review of a six-page paper (11 illus.) submitted to the All-Union Institute of Scientific and Technical Information.

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USSR

UDC [537.226+537.311.33]:[537+535]

BIKTIMIROVA, V. V., VUL', A. YA., POLYANSKAYA, T. A., SIKHARULIDZE, G. A.,
TURKEVICH, V. M., UKHANOV, YU. I., and SHMANTSEV, YU. V.

"Production and Electrical Properties of Semiconducting Compound CdSnAs_2 "

Tr. Leningr. politekhn. in-t (Works of Leningrad Polytechnic Institute), 1971,
No 325, pp 3-9 (From RZh-Fizika, No 1, Jan 72, Abstract No 1Y21443 by authors)

Translation: The authors describe a method of growing large single crystals of the ternary semiconducting compound CdSnAs_2 by zonal recrystallization with seed under special temperature conditions. The existence of holes with high mobility is inferred from the investigation of the dependence of specific resistance and Hall coefficient on magnetic field induction in p-specimens. The dependence of magnetoresistance on the angle between current-density and magnetic-induction vectors in n-specimens confirms the assumption regarding the sphericity of isoenergetic surfaces in the conduction band.

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UDC 681.3.06:51

BIKULOV, E. M., FATYKHOVA, I. M.

"The Problem of Ordering of a Mass of Recordings"

Tr. N.-i. i Proyechn. In-ta po Vnedreniyu Vychisl. Tekhn. v Nar. Kh-vo [Works of Scientific Research and Planning Institute for Introduction of Computer Equipment to the Economy], No 5, 1970, pp 153-161, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V772 by V. Mikheyev).

Translation: An estimate is presented of the length of a file of recordings beginning with which data should be ordered before performing search procedures in the file. It is assumed that ordering is performed according to the Shell algorithm with subsequent dual-path merging, and search in the ordered file is performed by sequential checking.

Immunology

USSR

UDC 615.471:615.835.5

VORONTSOV, I. V., Lt. Col. Med Serv, SEVERTSOVA, M. K., SMIRNOVA, T. A., and
BIKULOV, I. M., Maj Med Serv.

"The Effectiveness of Aerosol Immunization"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1970, pp 71-74

Abstract: Two aerosol typhoid vaccines were made, one from bacteria grown on solid medium, and the other from bacteria grown in liquid medium and alcohol dried. All experimental subjects were of similar age, size, and had similar living conditions. They had been vaccinated with typhoid and paratyphoid strains six months before. A total of 241 received aerosol inhalation for 15 minutes (dry vaccine) and 243 were treated similarly with vaccine prepared from alcohol-dried cultures. The reaction of both groups was very much alike. Within 6-12 hours, a slight rise in temperature was noted in a small percentage of subjects. However, 24 hours after aerosol revaccination, all side reactions subsided. Immunological tests a month after vaccination showed a twofold increase in antibody titer. The findings were similar in both groups. However, a few subjects vaccinated with dry vaccine showed a slight increase in the titer of O-agglutinins. A single vaccination with dry typhoid aerosol produced a significant increase in antibody titers.

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Immunology

USSR

UDC 615.47:615.835.5

BIKULOV, I. M., Maj Med Serv, VORONTSOV, I. V., Lt-Col Med
Serv, KREYNIN, M. K., Lt-Col Med Serv, SEVERTSOVA, M. K., and
KAVERINA-FIRGANG, K. G.

"Conducting Aerosol Immunization Under Field Conditions"

Moscow, Voenno-Meditsinskiy zhurnal, No 1, 1979, pp 34-36

Abstract: Experiments were conducted to determine the possibility and advantages of conducting aerosol immunization against typhoid fever under field conditions in a tent. Dry aerosol typhoid-fever vaccines of series 21-65 and 1-67 were used. The preparations were atomized and dispersed with the help of a special device placed in the center of the tent. For comparative purposes, parallel dispersion of the dry vaccines was conducted under normal conditions in a room. Immunological shifts in people immunized were determined by titration of O-agglutinins and Vi-hemagglutinins before to and a month after immunization. Data obtained by both methods of immunization indicated that a considerable increase in the titer of protective antibodies was produced, and that there was practically no difference in the results obtained after immunization under normal

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BIKULOV, I. M., et al., Moscow, Voenno-Meditsinskiy Zhurnal, No 1, 1970, pp 54-56

conditions in a room and under field conditions in a tent. The number of average temperature reactions was about the same, and no strong reactions were observed. Further investigations established that a brigade consisting of only two people -- a physician and registrar -- working in a tent and using the aerosol method, immunized an average of 1,248 people in a period of two hours and 40 minutes. A brigade of six people -- a physician, registrar, and four sanitary instructors, working continuously with a hypodermic could vaccinate only 150 people in the same period.

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either in milligrams of the vaccine or in units of antigenicity
... U₉₅ (value, inverse to the RPT titre). The calculations were
according to the formula

$$C = A \cdot 10/5$$

where

- A - the amount of vaccine found in 1 ml of the bubbler
(mg or U₉₅/l)
- 10 - volume of the fluid in the bubbler (ml);
- 5 - volume of air that passed through the bubbler in 15
minutes (lit.)

With consideration of the average volume of pulmonary ventilation of man during 15 minutes, the calculated expected dose corresponds to the value (C · 150).

No found (Table 1) that the somewhat greater activity of vaccine P permits to produce a correspondingly large concentration of aerosol active substance in one liter of air with less sprayed suspension per 1 m³ of room. The possibility of absorbing even amounts of aerosol in 1 m³ with the atomization of equal properties of both preparations.

Table 1

Vaccine	Amount of vaccine sprayed per 1 m ³		Vaccine atomization in 1 liter of air	
	Amount U ₉₅ type (mg)	#	U ₉₅ type	U ₉₅ type
P	R ₀	0.10	8,000	0.0053
		0.15	12,000	0.0087
		0.20	16,000	0.0150
Zh	60	0.10	6,000	0.0038
		0.15	9,000	0.0076
		0.20	12,000	0.0110
				0.22
				0.44
				0.78

Considering however that the antigenic and immunogenic properties of aerosol vaccines do not correlate with each other, we made further studies of the immunological changes after other, from Table 1, the spraying of equal batches of these preparations which contain different amounts of antigenic units (1 m³ can not assure equal concentrations of the aerosol). Their obtainability, only with the spraying of equal amounts of antigenic units. In connection with the various specific activity of vaccines P and Zh (U₉₅/mg) we did not get information on the weight concentration (U₉₅/mg) on the concentration expressed in antigenic units. The two preparations were compared according to the findings obtained after revaccination with equal aerosol amounts of the active substance (12,000 U₉₅ per 1 m³). Moreover, by knowing the higher immunogenicity of the P preparation in comparison with the Zh in animal experiments, we inoculated 25% of people with vaccine P, spraying a smaller amount of antigenic units (1000 and 5000) per 1 m³.

USSR

BIKYALIS, A.

"Limit Theorems for Sums of Independent Random Quantities"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], 1972, Vol 13, No 4, pp 4-14 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V43, by the author).

Translation: Asymptotic expansions are studied for distribution functions $F_n(x)$ of the normalized sum $S_n = \frac{1}{\sigma \sqrt{n}} \sum_{j=1}^n \xi_j$ of independent, identically distributed random quantities $\xi_1, \xi_2, \dots, \xi_n$. It is assumed that $M\xi_1 = 0$ and $D\xi_1 = \sigma^2 < \infty$. Necessary and sufficient conditions are produced for estimation of the residual term

$$R_n(x) = F_n(x) - \sum_{v=0}^{s-2} \left(\frac{1}{\sqrt{n}} \right)^v Q_v(x) \frac{e^{-\frac{x^2}{2}}}{\sqrt{2\pi}}.$$

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USSR

UDC: 519.2

RIKYALIS, A.

"On a Central Limit Theorem in R^k . II"

Lit. mat sb. (Lithuanian Mathematics Collection), 1972, 12, No 1, pp 73-84 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V37 [author's abstract])

Translation: For Part I see RZhMat, 1970, 7V19. Let $P_n(A)$ be the distribution of the sum $S_n = \frac{1}{\sqrt{n}} \sum_{i=1}^n \xi_i$ of independent identically distributed k -dimensional random quantities $\xi_1, \xi_2, \dots, \xi_n$ of Euclidean space R^k . It is assumed that ξ_1 has mathematical expectations equal to zero, and a nondegenerate matrix V of second moments. The method of eigenfunctions is used to find a series of estimates of the residual term in the multidimensional central limit theorem. For instance, the following theorem is proved.

Theorem 2. In order that the relation

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BIKYALIS, A., Lit. mat. sb., 1972, 12, No 1, pp 73-84

$$P_n(A) = P\{\eta \in A\} + o\left(n^{-\frac{\delta}{2}}\right), 0 < \delta < 1,$$

hold as $n \rightarrow \infty$ uniformly with respect to all convex Borel sets A of R^k , it is necessary and sufficient that the condition

$$\sup_{|t|=1} \sup_{-\infty < x < \infty} |P\{(S_n, t) < x\} - P\{(\eta, t) < x\}| =$$

$$= o\left(n^{-\frac{\delta}{2}}\right). \quad (1)$$

be satisfied. Here (S_n, t) is a scalar product; $|t|$ is the length of a vector t of R^k ; η is a k -dimensional normal random vector with mathematical expectations equal to zero and with matrix V of the second moments. Conditions of the I. A. Ibragimov type may be substituted for condition (1).

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BIKYALIS, A.

UDC: 519.214

"On a Central Limit Theorem in R^k . I"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 11, No 1, pp 27-58
(from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V39)

Translation The author considers a sequence of independent differently distributed random vectors $\{\xi_j = (\xi_{1j}, \dots, \xi_{kj})\}$ with distribution functions $\{F_j(x)\}$, $j=1, \dots, n$, where $x = (x_1, \dots, x_k)$. Let $\theta = (\theta_1, \dots, \theta_k)$ be a random vector with distribution function $\frac{1}{n} \sum_{j=1}^n F_j(x + E\xi_j)$ and a positively defined matrix of second moments W . Let $E\xi_{ij}^2(\xi_{ij}) < \infty$ for $i=1, \dots, k$ and $j=1, \dots, n$ and some even non-negative function $g(x)$ such that the functions $g(x)$ and $x/g(x)$ do not decrease on the positive half-line, and $\lim_{x \rightarrow \infty} g(x) = \infty$. Then there exists a positive constant $C(k)$ such that

$$\left| P \left(\frac{1}{\sqrt{n}} \sum_{j=1}^n (\xi_j - E\xi_j) \in A \right) - \Phi_{\theta, W}(A) \right| < \frac{C(k)}{g(\sqrt{n})} E[(\theta W^{-1} \theta') g(\sqrt{\theta W^{-1} \theta'})]$$

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BIKYALIS, A., Lit. mat. sb., 1971, 11, No 1, pp 27-58

uniformly with respect to all convex Borel sets A in Euclidean k -dimensional space. Here $\Phi_{0,W}$ is normal $(0,W)$ k -dimensional distribution. V. Petrov.

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UDC: 519.214

BIKYALIS, A.

"On the Precision With Which Normal Distribution Approximates the Distributions of Sums of Independent Identically Distributed Random Quantities"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 11, No 2, pp 237-240
(from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V40)

Translation: It is shown in this paper that I. A. Ibragimov's conditions (see RZhMat, 1966, 6V14K, p 127; 1967, 5V19; 1968, 11V36) are necessary and sufficient for a nonuniform estimate of the residual term in the central limit theorem of probability theory as well as in localized limit theorems (in the metrics of spaces L_1 and Z_1). Author's abstract.

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USSR

UDC: 519.214

BIKYALIS, A., MODERUDI, I.

"Concerning an Asymptotic Expansion for n-Fold Convolutions of k-Dimensional Distributions"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1970, 10, No 3, pp 433-443 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V45)

Translation: Asymptotic expansions of the form

$$P^{*n}(A \sqrt{n}) = \sum_{v=0}^l C_n^v \Phi^{*(n-v)}(P - \Phi)^{*v}(A \sqrt{n}) + o_{n \rightarrow \infty}(A \sqrt{n})$$

are considered for an n-fold convolution P^{*n} of k-dimensional distributions $P(A)$ of the random vector $\xi - E\xi = (\xi_1 - E\xi_1, \dots, \xi_k - E\xi_k)$. Here A is a Borel set of k-dimensional Euclidean space, Φ is k-dimensional normal distribution with parameters $(0, V)$, V is the matrix of second moments of vector ξ . An estimate from above is found for

$$C_n^v \Phi^{*(n-v)}(P - \Phi)^{*v}(A \sqrt{n})$$

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BIKYALIS, A., MODERUDI, I., Lit. mat. sb., 1970, 10, No 3, pp 433-443

assuming existence of moments of order $2+\delta$ ($0<\delta\leq 1$) for the random vector ξ . An estimate is found for the remainder $r_{n,2+\delta}(A\sqrt{n})$, which is uniform with respect to all convex Borel sets A . V. Petrov.

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USSR

UDC: 519.214

BIKYALIS, A.

"Asymptotic Expansions for Distributions of Sums of Independent Non-Lattice Random Vectors"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1970, 10, No 4, pp 673-679 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV44)

Translation: A multidimensional generalization is found for the Esson theorem on asymptotic expansion of the distribution function for a normalized sum of independent random quantities having identical non-lattice distribution with a finite absolute moment of third order. V. Petrov.

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1/2 020
UNCLASSIFIED
TITLE--SOME LOW MOLECULAR NITROGEN COMPOUNDS IN EXPERIMENTAL CEREBRAL
TUMORS IN ALBINO MICE -U-
AUTHOR--BILALOV, F.I.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 5, PP 88-90
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CEREBRUM, TUMOR, NITROGEN COMPOUND, AMMONIA, UREA, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0091
CIRC ACCESSION NO--AP0120791
STEP NO--UR/0219/70/069/005/0088/0090
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120791

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED THE CONTENT OF FREE AMMONIUM, UREA, ASPARAGINIC, GLUTAMIC AND GAMMA AMINOBUTYRIC ACIDS, AS WELL AS THE ACTIVITY OF ASPARTATE AMINOTRANSFERASE IN EXPERIMENTAL CEREBRAL TUMORS OF ALBINO MICE AND THE CEREBRAL TISSUE ADJACENT TO THE TUMOR. THE CONTENT OF AMMONIUM AND UREA IN CEREBRAL TUMORS WAS AUGMENTED IN COMPARISON WITH THE CONTROL. THE LEVEL OF ASPARAGINIC AND GLUTAMIC ACIDS IN THE TUMOR DID NOT DIFFER ESSENTIALLY FROM THE CONTROL. THE CONTENT OF GAMMA AMINOBUTYRIC ACID WAS REDUCED. THE ASPARTATE AMINOTRANSFERASE ACTIVITY IN THE TUMOR WAS HALF OF THAT IN THE CONTROL CEREBRAL TISSUE. FACILITY: CHAIR OF BIOCHEMISTRY OF THE ROSTOV-ON-DON STATE UNIVERSITY.

UNCLASSIFIED

USSR

BILAY, T. I., Mikrobiologicheskii Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 679-680


a high content of Ca ions); 4) certain properties of cell structures including the cell wall, mitochondria, and chloroplasts. A study of proteolytic enzymes showed that the proteolytic enzyme of the thermophilic fungus *Myriococcum albomyces* is stable at high temperatures; the action of temperatures in the 50-60°C range for one hour did not reduce its activity, while that of temperatures in the 70-80°C range reduced it by only 20-40 percent. On the other hand, exposure to temperatures of 60-70°C of the proteolytic enzyme formed by the mesophilic fungus *Asp. sulbureus* reduced its activity by 70-80 percent. Furthermore, the proteolytic enzyme of the thermophilic fungus was formed during 2-3 days of cultivation as compared with 5-7 days for the proteolytic enzyme of the mesophilic fungus; i.e., the metabolic processes of the thermophilic fungus were more intensive.

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USSR

UDC: 669.14.018.821:621.785.53


BIL'CHENKO, A. V., and PERMYAKOV, V. G., Kiev Polytechnic Institute

"Corrosion Resistance of Stainless Steels after High-Temperature Nitriding"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 1, Jan-Feb 70, pp 6-9

Abstract: Nitriding, while imparting high surface hardness to the steel, considerably reduces its corrosion resistance. This study concerns the effect of the nitriding temperature and subsequent heat treatment on the phase composition and corrosion resistance of 1Kh13, 4Kh13, and 1Kh18N9T stainless steels. The lower corrosion resistance of the steels is due to the impoverishment of the solid solution in chromium. The latter separates in the form of chromium nitride CrN and, apparently, metastable trigonal chromium carbide $(Cr, Fe)_7C_3$. The experimental results indicate that the corrosion resistance of stainless steels after high-temperature nitriding (using contact electric heating) and subsequent hardening including tempering is substantially higher after nitriding under conventional conditions commonly used in the industry. Nitriding at high temperatures using contact electric heating greatly intensifies the saturation of steel with nitrogen and cuts considerably the duration of nitriding (from many hours to minutes).

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1/2 034 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CORROSION RESISTANCE OF STAINLESS STEELS AFTER HIGH TEMPERATURE
NITRIDING -U-
AUTHOR-(02)-BILCHENKO, A.V., PERMAYAKOV, V.G.
COUNTRY OF INFO--USSR *B*
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 6(1), 6-9
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STAINLESS STEEL, NITRIDATION, ALLOY DESIGNATION, METAL HEAT
TREATMENT, CHROMIUM STEEL, CORROSION RESISTANCE, HIGH TEMPERATURE
EFFECT/(U)1KH13 CHROMIUM STEEL, (U)4KH13 CHROMIUM STEEL, (U)1KH18N9T
STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3C01/0384

STEP NO--UR/0369/70/006/001/0006/0009

CIRC ACCESSION NO--AP0126139

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126139

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF STAINLESS STEELS 1KH13, 4KH13, AND 1KH18N9T WERE NITRIDED AT 550-1050 DEGREES IN A STREAM OF NH SUB3. FOLLOWING NITRIDING THE SPECIMENS WERE ANNEALED IN WATER UNDER CONDITIONS SUCH THAT THE HERMETICITY OF THE SET UP WAS NOT BROKEN. THE SPECIMENS WERE THEN TESTED FOR THEIR CORROSION RESISTANCE IN TAP WATER, 30PERCENT KOH, AND IN CONCD. HCL AND HNO SUB3. THE PHASE COMPN. OF THE NITRIDED LAYERS WAS HETEROGENEOUS; HOWEVER, HIGHER NITRIDING TEMP. EFFECTED GREATER HOMOGENEITY AND CONSEQUENTLY GREATER CORROSION RESISTANCE. THE CORROSION RESISTANCE OF THE NITRIDED LAYERS INCREASED WITH DEPTH. THE MOST CORROSION RESISTANT WAS 1KH19N9T. THUS, NITRIDING OF STAINLESS STEEL AT HIGH TEMP. BY THE DESCRIBED METHOD RESULTS IN GREATER CORROSION RESISTANCE THAN NITRIDING COMMONLY USED AT PRESENT.

FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

USSR

UDC [537.226 + 537.311.33] : [537 + 535]

BILEN'KIY, B. F., GERASIMCHUK, R. V., PASHKOVSKIY, M. V.,
SAVITSKIY, V. G., FILATOVA, A. K.

"Structure and Optical Characteristics of Thin HgTe-CdTe Film Systems"

Vil'nyus, V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of the Zinc and Gallium Subgroup -- collection of works), 1970, pp 192-196 (from RZh-Fizika, No 11, 1971, Abstract No 11E1165)

Translation: Optical transmission spectra (OTS) of thin (0.03-0.5 μ) Cd and Hg telluride films as well as of their solid solutions are investigated. The films were obtained by the method of discrete vaporization of $Hg_xCd_{1-x}Te$ monocrystals ($x = 0, 0.75, 0.80, 0.85, 0.90, 1.0$). The OTS detected bands E_2 (5.40 eV) and $E_1 + \Delta_1$ (4.05 eV) in CdTe films. OTS of HgTe films and solid HgTe-CdTe solutions have a clear absorption band $E_2 + S$, whose position does not change with an increase in content of the second

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USSR

BILEN'KIY, B. F. et al, Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya, 1970, pp 192-196

component. It is assumed that the fundamental absorption spectra in the case of complex systems of the type investigated can be used for controlling the composition of corresponding films.

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Communications

USSR

UDC: 621.396.93

B
BILENKO, A. P.

"The Problem of Utilizing the Radio Frequency Spectrum in Peripheral Radio Service"

Moscow, Elektrosvyaz', No 6, Jun 70, pp 1-4

Abstract: Economic use of the radio frequency spectrum is one of the most serious problems of modern radio communications. Methods are considered for solving this problem in peripheral radio service by using other band sections, narrowing channel width, and increasing the duty schedule of the channel. New sections of the radio frequency spectrum can be allocated for use in peripheral communications only from the UHF band (300-450 MHz and up). This increases the complexity of equipment and raises cost by about 20-30%. Nevertheless, the use of this band for mobile communications is considered completely feasible. It is still too early to consider using frequencies above 500 MHz. Single-band modulation is proposed as a means of narrowing the channel in the UHF range since channel widths of less than 12.5 kHz in FM transmitters tend to show impaired transmission quality. One of the ways used to increase the duty schedule of a channel is by the use of the radiopaging system.

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BILENKO, D.I.

SPRS 542005
6.73

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XII-9. POSSIBILITIES OF CONTROLLED CREATION OF CONTACT EPITAXIAL STRUCTURES

[Article by D. I. Bilenko, Yu. N. Galashchikov, A. I. Saitov, Saratov, Novosibirsk, Il' Sibirskiy po Protsessam Razvitiya i Stroyeniya Poluprovodnikov Khimicheskoy i Fizicheskoy Kibernetiki, 12-17 June 1972, p. 172]

The further development of epitaxial technology is connected to a great extent with the growth of complex structures in which selectively etched regions of the specimen filled with layers with different alloying levels and different types of alloying admixture are created in a single technological process. The realization of such internal processes combining a number of technological operations is essentially facilitated on application of control methods insuring information about the properties of the structure directly during the course of obtaining it. Such control methods are important for the study of kinetics and mechanisms of epitaxial growth.

The method of determining the thickness of the grown or etched layer which we developed for gas transport methods of obtaining epitaxial structures is used for controlling the deposition of the layers given with respect to thickness in selectively etched regions of the crystal. Knowledge of the instantaneous growth rate (etching rate) and the thickness of the deposited (etched) layer at a given point in time permitted these process parameters and the structures to be kept as given. The knowledge of the growth rate, the thickness of the grown layer and the temperature of realizing the process permitted growth of multilayered silicon structures with given parameters of the inside layer. The correction of the thickness of the inside layer was made considering the formation of transition layers during the growth process. The performed experiments confirmed the possibilities of controlled realization of the internal processes of the creation of complex epitaxial structures. Information was also obtained on the kinetics of the deposition of the silicon layers in individual stages of the process.

USSR

UDC 621.382.2

BILENKO, D. I., ZHARKOVA, E. A., KHASINA, YE. I., Saratov State University imeni
N. S. Chernyshevskiy

"Transmission of Infrared Radiation by Diodes Based on Silicon Alloyed with
Gold"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 948-950

Abstract: A study was made of the results observed when passing infrared radiation to diodes manufactured from n-type silicon alloyed with gold with a specific resistance of $\sim 10^4$ ohms-cm and an au concentration of $\sim 10^{15}$ cm⁻³. Coherent radiation with a wave length of 1.15, 3.39 and 10.6 microns was used. A study was made of the effect of a magnetic field parallel to the infrared radiation and perpendicular to the current lines on the relative variation of the diode transmission. For currents larger than the cutoff current, the magnetic field essentially changes the nature of transmission of the infrared radiation at each point of the specimen. Therefore, the observed optical inhomogeneity of the diodes can be connected with the effect of the free charge carriers. On the other hand, measurements of the current functions of transmission of the infrared radiation with a decrease in the specimen size in the

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USSR

UDC 621.382.2

BILENKO, D. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 948-950

direction of displacement of the light probe demonstrated that the dependence of δT on the position of the infrared probe for identical currents is fully retained for the given section of the specimen. The observed decrease in transmission of the diodes cannot be explained by nonselective absorption by free carriers since the studies performed did not demonstrate the dependence on wavelengths characteristic of this type of infrared absorption. The increase in transmitted power cannot be connected with recombination radiation, for the effect of the latter was entirely excluded under the experimental conditions. The most probable explanation of the observed phenomena can be nonuniform variation of the fraction index of the semiconductor material with deep impurities on passage of the current.

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USSR

UDC 537.311.33

BILENKO, D. I., LUN'KOV, A. Ye., ORNATSKAYA, Ye. M., and TSIPORUKHA, V. D.

"Interaction of Millimeter and Submillimeter Radiation with Semiconductor Materials"

Tr. NII Introskopii (Works of the Scientific-Research Institute for Introsopes), 1970, Issue 4, pp 61-62 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstr-ct No 9B27)

Translation: A calculation is made of the reflection coefficient of the electromagnetic radiation from nondegenerate semiconductor materials for various scattering mechanisms of charge carriers. The results of the calculation show the correctness of a description of the properties of materials in the millimeter and submillimeter bands based on simplified semiclassical relations for a complex dielectric constant. Summary.

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USSR

UDC: 621.382

~~BILENKO, D. I.~~, LUN*KOV, A. Ye., YAZIKOV, V. N.

"Measurement of the Reflection Factor Modulus and Phase in Semiconductors in the Millimeter Wavelength Range"

Gorkiy, Izvestiya VUZov SSSR Radiofizika, Vol. 13, No. 3, 1970, pp 453-461

Abstract: Research into semiconductor characteristics in the millimeter wavelength range is useful in the design of contactless, nondestructive methods for measuring semiconductor parameters. Especially important are measurements of the modulus and phase of the coefficient of reflection since these quantities are closely connected with the fundamental electrophysical parameters of the semiconductors. The authors warn, however, that methods for measuring these quantities in the centimeter band do not give the required degree of accuracy when applied to the millimeter band. Measurement error in the millimeter band was no more than one percent for 1/2

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USSR

UDC: 621.382

BILENKO, D. I., et al, Izvestiya VUZov SSSR Radiofizika, Vol. 13,
No. 3, 1970, pp 453-461

the modulus, and plus or minus one percent for the phase. The same method of measurement is applicable to low-alloyed GaAs specimens in the two-millimeter band. A block diagram of the measuring equipment is given.

2/2

1/2 042 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MEASUREMENT OF THE REFLECTION FACTOR MODULUS AND PHASE IN
SEMICONDUCTORS IN THE MILLIMETER WAVELENGTH RANGE -U-
AUTHOR-(03)-BILENKO, D.I., LUNKOV, A.YE., YAZIKOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--BORKIY, IZVESTIYA VUZOV SSSR RADIOFIZIKA, VOL. 13, NO. 3. 1970, PP
453-461
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT,
PHYSICS
TOPIC TAGS--SEMICONDUCTOR PROPERTY, MILLIMETER WAVE, NONDESTRUCTIVE TEST,
ELECTRONIC MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1956

STEP NO--UR/0141/70/013/003/0453/0461

CIRC ACCESSION NO--AP0130738

UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESEARCH INTO SEMICONDUCTOR CHARACTERISTICS IN THE MILLIMETER WAVELENGTH RANGE IS USEFUL IN THE DESIGN OF CONTACTLESS, NONDESTRUCTIVE METHODS FOR MEASURING SEMICONDUCTOR PARAMETERS. ESPECIALLY IMPORTANT ARE MEASUREMENTS OF THE MODULUS AND PHASE OF THE COEFFICIENT OF REFLECTION SINCE THESE QUANTITIES ARE CLOSELY CONNECTED WITH THE FUNDAMENTAL ELECTROPHYSICAL PARAMETERS OF THE SEMICONDUCTORS. THE AUTHORS WARN, HOWEVER, THAT METHODS FOR MEASURING THESE QUANTITIES IN THE CENTIMETER BAND DO NOT GIVE THE REQUIRED DEGREE OF ACCURACY WHEN APPLIED TO THE MILLIMETER BAND. MEASUREMENT ERROR IN THE MILLIMETER BAND WAS NO MORE THAN ONE PERCENT FOR THE MODULUS, AND PLUS OR MINUS ONE PERCENT FOR THE PHASE. THE SAME METHOD OF MEASUREMENT IS APPLICABLE TO LOW ALLOYED GAAS SPECIMENS IN THE TWO MILLIMETER BAND. A BLOCK DIAGRAM OF THE MEASURING EQUIPMENT IS GIVEN.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ABSORPTION OF RADIATION BY LOCALLY EXCITED CHARGE CARRIERS -U-

AUTHOR--(03)-ABANSHIN, N.P., BILENKO, D.I., LOGGAUZ, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 133-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON HOLE, CARRIER DENSITY, PARTICLE DISTRIBUTION,
ELECTROMAGNETIC WAVE ABSORPTION, EXCITED ELECTRON STATE, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1215

STEP NO--UR/0139/70/013/003/0133/0135

CIRC ACCESSION NO--AP0124869

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--300C170

CIRC ACCESSION NO--AP0124869

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS WERE DEVELOPED FOR CALC. THE AV. CONC. OF EXCESS HOLES, $\Delta \bar{P}$. THE DISTRIBUTION WAS PLOTTED OF $\Delta \bar{P}$ FOR DIFFERENT RATIOS OF THE RADIUS, R , OF THE EXCITING SPOT AND THE DIFFUSION LENGTH. FROM THE PROPORTIONALITY OF THE ABSORPTION COEFF., K , AND THE CONC. OF CARRIER CHARGES, ΔK EQUALS $\Sigma \Delta \bar{P}$, THE ABSORPTION OF NONEQUIL. CARRIER CHARGES WAS CALCD. FOR DIFFERENT POSITIONS AND CONFIGURATIONS OF THE SPOT; Σ IS THE CROSS SECTION OF ABSORBED RADIATION. FOR ΔK_D IS SIMILAR TO 1, $K_{SUBO D}$ IS SIMILAR TO 1, WHERE D IS THE THICKNESS OF THE ABSORBING LAYER AND K_{SUBO} IS K FOR EQUIL. CHARGE CARRIERS, $\ln(1-T_{SUBO})$ EQUALS MINUS $\Sigma D \Delta \bar{P}$ AND FOR ΔK_D IS SIMILAR TO 1, $K_{SUBO D}$ SMALLER THAN 1, $\ln(1-T_{SUBO})$ EQUALS $\ln(1-R'^2)$ MINUS $\Sigma D \Delta \bar{P}$, WHERE T_{SUBO} AND T IS RADIATION PASSED UP TO AND AT EXCITATION, RESP.
FACILITY: SARATOV. GOSUNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

USSR

UDC 518:517.944/.947

BILETSKIY, Yu. S.

"One Approach to Solving Boundary Value Problems on Computers"

Moscow, Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti -- Sbornik
(Use of Computer in the Electrotechnical Industry -- Collection of Works),
1971, pp 342-347 (from Referativnyy Zhurnal -- Matematika, No 7, July 71,
Abstract No 7B944, by I. Shelikhova)

Translation: Using the example of the solution of a mixed boundary value problem for the Laplace equation in a multiply-connected region bounded by a piecewise-smooth contour, the author expounds a method which generalizes, in some sense, familiar methods of solving boundary value problems based on the concept of the exact satisfaction of a differential equation and the approximate satisfaction of boundary conditions. The approximate solution is defined in the form of a sum of n linearly independent functions. The solution of the initial problem reduces to minimizing the functional by the fastest-descent method. The point which provides the minimum for this function yields the unknown coefficients of expansion. A program was developed for the Minsk-22 computer that implements the method described as applied to the first, second, and third boundary value problems of the Laplace equation.

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USSR

B UDC: 621.791.763.029 8

ORLOV, B. D., MARCHENKO, A. L., ISAKOV, A. F., BILEV, K. K., IL'IN, B. V.

"A Liner for Spot and Roller Welding"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 74, patent No 261602, filed 6 Nov 68

Abstract: This Author's Certificate introduces a liner for spot and roller welding of aluminum-magnesium alloys. This liner, in the form of a strip, is introduced into the zone of the welded seam mainly for checking penetration. As a distinguishing feature of the patent, inspection quality is improved and the corrosion strength of the welded joint is increased by making the strip from an alloy of aluminum and manganese taken in the following percent ratio: manganese -- 5-6%, and the remainder aluminum. The thickness of the strip is 7-8% of the thickness of one of the plates being welded.

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ACC NR: AP7010487 (N)

SOURCE CODE: UR/0032/67/033/001/0088/0091

AUTHOR: Konradi, G. G.; Zmiyevskiy, V. I.; Chelysheva, A. A.; Godin, V. M.;
Bilev, K. K.; Trutnev, V. V.; Il'in, B. V.

ORG: none

TITLE: Methods for the determination of the mechanical properties of bimetallic sheet joints

TOPIC TAGS: ~~bimetal~~, metallurgic process, metallurgic testing machine, pendulum
~~mechanics~~ *mechanical properties, metal properties, sheet metal*

ABSTRACT: The paper discusses a number of methods and devices which have been developed for the purpose of determining the mechanical properties of bimetal sheet jointings, during breaking and shearing tests under static and dynamic load conditions. The material employed in the assessment of the sensitivity of these methods was KH18N10T-AMg6 bimetallic sheet steel, 5 + 5 mm thick, obtained by rolling through an intermediate layer of aluminum, 0.2 — 0.3 mm thick. In some of the experiments, a pendulum impacting testing machine was employed, operating at a rate of from 5 to 7 m/sec at the time of sample failure. The methods described are shown to allow sufficient sensitivity in the determination of strength characteristics and the

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UDC: 620.170

ACC NR: AP7010487

evaluation of plastic properties of bimetal connections, and to be suitable for use in production techniques. Orig. art. has: 5 figures.

SUB CODE: //13/ SUBM DATE: 02Dec65

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Acoustical and Ultrasonic

USSR

UDC: 541.113

PITAYEVSKAYA, L. L. and BILEVICH, A. V.

"Velocity of Ultrasonic Propagation in Compressed Methane"

Moscow, Doklady Akademii nauk SSSR, vol 204, No 6, 1972, pp 1346-1348

Abstract: In earlier papers, the authors measured the velocity of ultrasonic waves in monatomic He and Ar, in N₂, and in CO₂. In the present paper, they describe the results of experiments they performed in the measurement of ultrasonic propagation through the multiatomic gas of methane. This gas was chosen because it is known that there are large accumulations of it in the depths of the earth and because the data derived from such experimentation can be useful for geochemical computations. The particular specimens used were obtained from the Experimental Plant for Reduction of Natural Gas and had a purity of 99.95%. Velocity measurements were made by the pulse method at pressures of 4.5 kbar in a temperature interval of 25-200° C, and in the frequency range of 0.1 to 4 MHz. No variation of the velocity with variations in frequency was detected, but curves are given for the velocity as a function of pressure at various temperatures, for the computed thermal capacity as a function of the density at various

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USSR

UDC: 541.113

PITAYEVSKAYA, L. L., et al, Doklady Akademii nauk SSSR, vol 204,
No 6, 1972, pp 1346-1348

temperatures, and for the adiabatic compressibility as a function of the density at various temperatures in the 25-200° C range. Members of the M. V. Lomonosov Moscow State University, the authors express their gratitude to Academician L. F. Vereshchagin for his assistance.

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- 110 -

BiLEVICH, K.A.

CHEMICAL TRANS.

SINGLE-ELECTRON TRANSFER AND CHEMICAL TRANSFORMATIONS
(Conference in Rostov-on-Don)

[Article by Candidate of Chemical Sciences Z. V. Todres, Moscow,
Vestnik Akademi Nauk SSSR, Russian, No 9, September 1973, pp
102-106]

*Z. V. Todres
20 June 1974
to Rhy/115*

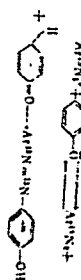
A conference on the role of electron transfer in chemical reactions was held in Rostov-on-Don on 22-25 May. It was organized by the Northern Caucasus Scientific Center of the USSR Academy of Sciences; about 40 reports were presented. Participating in the conference were the leading chemical institutes of the USSR and the republican academies, and also Rostov-on-Don, Moscow, Leningrad and Gorkiy universities.

Chemical reactions are usually regarded as the rupture and formation of bonds, that is, the rearrangement of the structure of a molecule. It is now considered, however, that the displacement of atoms or atomic arrangements is preceded by the transfer of electrons from one of the reacting molecules to the other. The study of that stage, which has become possible through the use of new instrumental methods of investigation, especially of electron paramagnetic and nuclear magnetic resonance, expands concepts of the reaction mechanism as a sequence of elementary stages known to us.

As a result of electron transfer new particles appear, not known to organic chemistry of the past. The properties of these products were examined in a number of reports. Hemoglobin, cytochrome C and other enzymes with Fe(II) after electron transfer give non-equilibrium forms in which the iron has already gone over into the state Fe(II) but the protein part still retains its previous configuration (R. M. Byvdayev). The transformation of 4-ethyl-4-nitro-1,5-dithiane into an anion-radical is accompanied by complete cis-trans-isomerization. Destruction of the symmetry of the molecule leads to establishment of equilibrium: 4-nitro-4-ethyl-1,5-dithiane in the presence of electron transfer gives a mixture

- 143 - JfAS 60661, 30 Nov 73

O. Yu. Oshlobyatin, B. N. Babinov et al. arrived at the conclusion that the aromatic hydrocarbons forming from aryl diazonium salts under the effect of donor compounds have a low level of the kinetics of the reaction of diazonium salts with triphenyl phosphorus acid can be described by equations of classical radical-chain processes, which involve the stages of initiation, propagation and termination of the chains. For different aryl diazonium salts the rate of electron transfer and nitrogen coupling vary symbolically (B. N. Babinov et al.). It can be assumed that in the presence of nitrogen coupling at first there is electron transfer, and later the reaction of radicals to form the azo heteronuclear resonance of the azo radical. A. Bilevich et al. used the method of 15MB4 with sodium phenolate in an acetone-methyl alcohol mixture. In the first moments after the reaction of C₆H₅N₂ with 15MB4 strong positive polarization of the signals belonging to the dye was observed. The signal from the starting diazonium salt also was polarized. They consider that this indicates reversibility of the first stage of the following equation:



The role of electron transfers proves to be deciding also for another heterolytic reaction -- nucleophilic substitution at an aromatic carbon atom. S. M. Sheyn, L. V. Bryukhovetskiya et al. substantiated the scheme of transformation of p-nitrochlorobenzene into p-nitroanisole, which takes into consideration the presence in the reaction mixture of anion-radicals of the initiator and end products and also includes acts of chain transfer through electron exchange. An important feature of the scheme is that it organically combines newly formulated concepts with already known ones, leading in the end to the usual precursor of the substitution product -- a sigma-complex. Consequently, heterolytic reactions are not purely ionic, but they cannot be regarded as purely radical.

The participants in the conference emphasized that revealing the role of electron transfers is a very important task, as it permits more profoundly understanding the essence of chemical transformations and, on the basis of that, more correctly selecting the conditions of reactions and increasing the yield of useful products.

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANISM OF NUCLEOPHILIC SUBSTITUTION -U-

AUTHOR--(04)--BILEVICH, K.A., BUBNOV, N.N., OKHLOBYSTIN, O.YU., RADZHABOV,
N.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 191(1), 119-21 (PHYS CHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, CHLORINATED ORGANIC COMPOUND, FREE
RADICAL, CHEMICAL REACTION MECHANISM, EXCHANGE REACTION, REACTION
KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0712

STEP NO--UR/0020/70/191/001/0119/0121

CIRC ACCESSION NO--AT0124382

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124382

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. FROM DATA OF THE RATE OF INITIAL FORMATION OF ARO RADICALS AS RELATED TO CONC. OF ARO PRIME NEGATIVE ION AND TRITYL CHLORIDE IN TETRAHYDROFURAN SOLN. AT VARIOUS CONCNS. IN SOLN. IT WAS CONCLUDED THAT THE FORMATION OF SUCH ARO RADICALS OCCURS BY 2 PATHS. THEY FORM ACCORDING TO A CARBONIUM MECHANISM THAT IS KINETICALLY IDENTICAL WITH THE SWAIN TYPE REACTIONS, AND THEY ALSO FORM FROM INTERACTION OF THE ARO PRIME NEGATIVE ION WITH TRITYL CATION FORMED BY DISSOCN. OF PH SUB3 CCL, WHICH IS A PURELY S SUBN 1 INGOLD TYPE REACTION OF 1ST ORDER IN RESPECT TO SUBSTRATE AND ZERO ORDER IN RESPECT TO THE NUCLEOPHILE. THE CARBONIUM PORTION OF THE PROCESS IS DESCRIBED BY SUMMARY 3RD ORDER KINETICS: 1ST ORDER IN RESPECT TO THE HALIDE AND 2ND ORDER IN RESPECT TO PHENOXIDE ION. THE REACTION STUDIED WAS THAT OF PH SUB3 CCL AND P,ME SUB3 CC SUB6 H SUB4 OK. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

General

USSR

BILIBIN, A., Professor, Member, Academy of Medical Sciences USSR, and
TSAREGORODTSEV, G., Professor, Doctor of Philosophical Sciences

"Medicine and Society"

Moscow, Nauka i Zhizn', No 2, Feb 70, pp 77-79

Abstract: The authors reflect with many misgivings on the effects of the scientific and technological revolution on human health and on the practice of medicine. They deplore the increasing tendency toward the "veterinarianization" of medicine, i.e., looking upon man not as an individual but as a set of diseases and symptoms to be measured by means of instruments and treated in the same way. While the accumulation of facts goes on apace, synthesis is lagging far behind. This "arrhythmia" results in increasing differentiation and ever narrower specialization of scientists as well as physicians, with adverse effects on the quality of medical care. The rapid tempo of technological progress and the introduction of increasingly complicated machines are making demands beyond the adaptive capabilities of the human body, although they have conferred numerous benefits. Automation and cybernetics are essential, but they must be subordinated to the practice
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USSR

BILIBIN, A., and TSAREGORODTSEV, G., Nauka i Zhizn', No 2, Feb 70, pp 77-79

of a humane medicine, a medicine oriented toward the integral human organism. The physician must acquire the ability to distinguish between science and pseudoscience, with its typical fetishization of methods and research techniques.

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BILIBIN, A. F.

METHODOLOGICAL ISSUES IN INFECTIOUS PATHOLOGY AND CHEMOTHERAPY

[Article by A.F. Bilibin (Moscow); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Ruzskum, no 2, 1972, pp 63-69]

UDC: 616.9-085.28

SPRS 56019
17 MAY 72

We should always be concerned not to lose out "sense of direction," especially when dealing with treatment of patients.

Where are we going? We have only to pose such a question to immediately hear in response: "success," "achievements." Referring to success in modern medicine, it is primarily active drugs, mainly chemotherapeutic agents, major surgery, and the most complex immunological techniques that one has in mind. All this constitutes major achievements which coincided with prolonging the life expectancy and generally improving the physical condition of the people. This is a known fact. However, if we digress from what we read in the popular literature and ask ourselves whether the above discoveries and achievements are indeed the cause of better health, we would have to answer in the words of the folk proverb, "All that glitters is not gold." In so stating we by no means intend to minimize the significance of these achievements. We merely wish to stress the fact that they become potent factors only under specific conditions. The name for these conditions is biological wisdom. We merely wish to state that of our ancestors to the extent that our life is more compatible with the immutable environmental factors with which man is closely related. We must understand them well enough not to enter into conflicting and tragic situations and states often leading to biological or mental catastrophe. Ecology, i.e., awareness of the relations between man and the immutable environmental factors, is the scientific expression of biological wisdom.

In the history of medicine, physicians have often demonstrated the miracles of treatment. And these miracles have always been based on a close link between treating and nature. At any rate the medical activity that amazed human imagination was to some extent or other permeated with the breath of nature.

But, in general, it must be stated that medicine, especially in the field of therapy, has not made the same advances as mathematics, physics, and technology. In analyzing the reasons for this, it should be stressed, first of

USSR

UDC 616.988.73-036.12-085.371

BILIBIN, A. F., IL'INSKIY, Yu. A., TERSKIKH, I. I., and DVURECHENSKAYA, G. S.,
Chair of Infectious Diseases, Second Moscow Medical Institute imeni N. I. Pirogov,
and Ornithosis Laboratory, Institute of Virology imeni D. I. Ivanovskiy, Academy
of Medical Sciences USSR

"Vaccine Therapy in Chronic Ornithosis"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 24-27

Abstract: Chronic latent ornithosis with periodic relapses must be treated not only with antibiotics which act on the ornithosis pathogen and accompanying bacteria, but also with substances which stimulate the body's general and specific reactivity. The tissue ornithosis vaccine developed by Terskikh in 1963 accomplishes these objectives. The vaccines can be given subcutaneously or intracutaneously. The treatment procedure is determined individually for each patient, on the basis of his local, focal, and general reactions to initial intracutaneous administration of 0.1 ml of the vaccine. If the reactions are mild, the intracutaneous route is used for subsequent vaccinations. This method is also recommended when other diseases are present. Immediate and long-term observations of patients with chronic ornithosis who have been treated with this vaccine indicate that the method is effective.

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Acc. Nr:

AP0036809

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 1, pp. 12-18

CONCERNING PATHOGENESIS OF TYPHOID-PARATYPHOID
CARRIER STATE

~~A. F. Bilobin~~ V. D. Timakov, V. M. Bondarenko, L. V. Ivanova

A study was made of the process of interaction of intracellular forms of typhoid-paratyphoid bacilli with the bone marrow cells of the patients and carriers. Bone marrow was obtained by trephine-biopsy of the ileum and cultivation in vitro in special chambers of MBH-12 microscope. Primary puncture material, cellular detritus and cultural fluid were examined bacteriologically for confirmation of specificity of the process and of the changes recorded in the cells under study in the bone marrow cultures. Investigations were carried out according to the scheme of analysis for isolation of bacterial and L-forms of the causative agent. A method of phasic-contrast microscopy in combination with fluorescent-serological method was used in this work. Bone marrow proved to be nonsterile in 13 of 20 patients and

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carriers examined. A morphological picture of the bone marrow of chronic carriers was characterized by the presence of a great number of macrophagic elements, infected in a number of cases by forms of the causative agent differing in morphological properties. The identified myelostains were represented by 3 typical typhoid cultures, 4 stable L-forms and 6 mixed cultures of typhoid-paratyphoid bacilli. Cells affected by these bacilli usually perished by the end of the 5th—8th day of bone marrow incubation; as to the uninfected bone-marrow elements, they formed a cellular unistratum, in individual cases remaining viable for 58 to 60 days. Experimental results lead to a supposition that chronic typhoid-paratyphoid carrier state is a general process, in which a definite role is played by bone marrow.

D.N.

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BILIBIN, D.

Geophysics

Friday, April 20, 1972

1

K. Alexeevsky and T. Nikulayeva

Top secret was a national security classification level for information that was considered to be of such a nature that its unauthorized disclosure would result in identifiable damage to the national defense. It was the official of the Department of Defense who assigned "confidentiality" to information, and the official of the Department of State who assigned "top secret" status to information. The Department of Defense assigned "top secret" status to information that was of such a nature that its unauthorized disclosure would result in identifiable damage to the national defense. The Department of State assigned "top secret" status to information that was of such a nature that its unauthorized disclosure would result in identifiable damage to the national defense.

The authors of the article "An attempt to understand the 'new' mathematics" and the "new mathematics" movement are the authors of the article "The new mathematics movement" in the *Journal of the Philosophy of Education Society of Great Britain*. In that article the authors point out that the "new mathematics" movement is a response to a change in the philosophy of mathematics, and that it is a response to a change in the philosophy of mathematics.

The article "Mysterious Pre-Columbian Tomb" by the V. Comyns deals with modern hypotheses of the location of and surrounding pirates.

Functioning of the brain is one of the central problems of modern biology. Investigation of the mechanism of the mind of living organisms is one of the most important articles entitled "On Heredity and the Mind".

[illegible]

None leading from present controversy of "Society of the Future" is one of the most attractive and most interesting little known to us, not being published in the United States. "Hunting-Dog" deals with "the development" and of his friends?

IMRAY REVUE V Vol. 1 (1910) No. 1 (1910)

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002200410008-4"

USSR

UDC 621.316.153

~~BILIK, N. I.~~

"Generalized Calculated Loads of Municipal Electric Power Networks"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 146-151 (from PZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 262)

Translation: Consolidated specific electric loads are presented for the micro-districts, districts and built-up areas of the cities for calculating the municipal electric power networks, selecting the transformer and generating powers when developing the master plans for cities, electric power supply systems and planning assignments with respect to the municipal electric power supplies. The loads are differentiated as a function of the type of power carrier, the size of the city, and the number of stories of the buildings. The specific calculated loads obtained considering the urban development norms and the effect of non-coincidence of the load peaks of the residential and public sectors are 15-20% below those used in design practice. There are 3 tables and a 12-entry bibliography. [Central Scientific Research Institute of Experimental Planning of Engineering Facilities for Cities]

1/1

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1/2 033
TITLE--STRENGTH AND ANTIFRICTION PROPERTIES OF CERTAIN POLYMER MATERIALS
-U-
AUTHOR--(02)-BILIK, SH.I., BELENKIY, M.V.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 37-39
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FILLER, PHENOL FORMALDEHYDE RESIN, POLYAMIDE RESIN,
POLYFORMALDEHYDE, TEFLON, POLYMER PHYSICAL PROPERTY, PLASTIC MECHANICAL
PROPERTY, ANTIFRICTION MATERIAL, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1866
CIRC ACCESSION NO--AP0130693
STEP NO--UR/0122/70/000/002/0037/0039
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY THE EFFECT OF TEMPERATURE (FROM MINUS 100 TO PLUS 100DEGREESC) ON THE PHYSICAL, MECHANICAL, AND ANTIFRICTION PROPERTIES OF THERMOSETTING POLYMERS WITH VARIOUS FILLERS BASED ON PHENOLFORMALDEHYDE RESIN AND THE THERMOPLASTICS (POLYCAPROAMIDE, POLYFORMALDEHYDE, AND TEFLON 4).

UNCLASSIFIED

Acc. Nr.

AP0045164

Abstracting Service:

CHEMICAL ABST.

Ref. Code

UR0191

91223a Adhesion of some polymers to metal substrates. Cherkasskaya, P. M.; Bilik, Sh. M.; Gurman, I. M.; Slyudikova, N. N. (USSR). *Plast. Massy* 1970, (1), 62-4 (Russ). Polymeric adhesives, e.g., epoxy resin ED-5 [cured with polyethylene polyamine (I)], epoxy compd. K-139 (cured with I), epoxy compd. K-153, epoxy compd. K-156, and a polyurethane varnish UR-19, were used for bonding bronze and steel plates and polymer films. Bronze and steel plates were sandblasted and defatted prior to bonding. Expts. were conducted with reinforced polymer PLD and PLT films (PLD is a polyamide (II) plasticized with rubber (III), and PLT a II-III-poly(vinyl chloride) copolymer), polypyromellitimide (IV), 1,2-C₆H₄(NH₂)₂-1,3-C₆H₄(CO₂H)₂ (V) copolymer, 3,3'-diaminodiphenyl sulfone (VI)-V copolymer, and 2-MeC₆H₄NH₂-V copolymer. The V-VI copolymer had the highest adhesion to bronze. Bronze and steel plates were best bonded by K-139, and PLD, PLT, and IV films were bonded to bronze and steel plates by K-139 and K-156. CKJR

REEL/FRAME

19780064

Acc. Nr: **AP0047170**

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,
Vol 70, Nr 2, pp 217-224

DISORDERS IN THE ELECTRIC ACTIVITY OF THE MUSCLES
IN «HEALTHY» RELATIVES OF PATIENTS WITH STRÜMPLES
FAMILIAL SPASTIC PARAPLEGIA

Billevich-Popova, A. S.

The report deals with the results of a clinico-electromyographical study of 36 «healthy» relatives in patients with Strümpels spastical paraplegia. EMG studies were convened in 28 relatives. A clinical observation of 6 relatives displayed «obliterated» forms of familial paraplegia. In 12 cases there were «minor» symptoms of the disease in the form of patellar and adductor hyperreflexia. In 3 other relatives there were other diseases of the nervous system. In 15 relatives there were no pathological signs in the neurological state. In a EMG study disorders of muscular electrogenesis, inherent to spasticity and found in a florid form in the patients, but less expressed were seen in 16 relatives: in 6 cases—obliterated symptoms of the disease, in 9 — «minor» symptoms and in 1 clinically normal relative. Thus, the EMG studies permit to depict the basic symptoms of familial paraplegia — an increase of the muscular tone of the spastic type, not found by clinical means. The results of a EMG study with a consideration of clinical and genealogical data may be utilized in the diagnosis of «minor» forms, as well as in the initial stages of Strümpels spastic paralysis.

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Acc. Nr:

ATO 036006

Abstracting Service:

INTERNAT. AEROSPACE ABST.

Ref. Code:

4-70 UR 0441

B

A70-19540 #

REINFORCEMENT OF A PLATE WITH A CIRCULAR HOLE BY
MEANS OF A UNILATERAL ELASTIC COVER PLATE (PIDKRIP-
LENNIA PLASTINKI Z KRUGOVIM OTVOROM ODNOSTORON-
N'OIU PRUZHNOIU NAKLADKOIU).

E. M. Bilovits'kii (Akademiia Nauk Ukrains'koi RSR, Institut
Mekhaniki, Kiev, Ukrainian SSR).

*Akademiia Nauk Ukrains'koi RSR, Dopovidi, Serii A--Fiziko-
Tekhnichni i Matematichni Nauki, vol. 31, Nov. 1969, p. 996-999, 6
refs. In Ukrainian.*

Analysis of the stressed state of a plate with a circular hole
reinforced by an attachment collar on one of the plate's sides.
Separate solutions are obtained for a plate under tension and
bending. The boundary conditions are determined with the aid of
Airy stress functions and are reduced to a system of two differential
equations in each of the cases studied. A numerical example for
omnidirectional tension at infinity is included.

V.P.

M.T

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REEL/FRAME

19720754

USSR

UDC 531.787.913.087.92

ATAKULOV, B.A., AFUZOV, A.YA., BILYALOV, E.I., OLIMOV, KH., FAYZIYEV, F.R.

"Concerning Strain Resistivity Properties Of p-Type Films Of GeTe and PbTe"

Dokl. AN UzSSR (Proceedings Of The Academy Of Sciences, Uzbek SSR), 1972, No 2, pp 30-31 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B378)

Translation: An experimental study is made of the dependence of resistance on strain [deformatsiya] during compression and expansion, for polycrystalline films of GeTe and PbTe deposited by thermal evaporation in a vacuum of 10^{-4} mm of mercury on a $3 \times 10 \times 0.015$ mm² paper substrate. In the absence of strain, the resistivity of the GeTe and PbTe films equals, respectively, 1.4 and 0.3 ohm.cm. 6 ref. V.K.

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USSR

UDC 621.771.25

KOTESHOV, N. P., Candidate of Technical Sciences, BILYARCHIK, R. L., Engineer, and SHUTKO, V. V., Engineer, Dnepropetrovsk Metallurgical Institute and the Dnepropetrovsk Cast Iron Roller Plant

"Effect of Casting Conditions on the Service Characteristics of Small Rollers Made of Magnesium Cast Iron Alloy"

Moscow, Stal', No 1, Jan 71, p 49

Abstract: For modern, highly productive mills, rollers with a hardness of at least 370 HB and with durability are required. This paper describes the methods used by the Dnepropetrovsk Cast Iron Roller Plant for manufacturing rollers with these requirements. The magnesium cast iron alloy also includes Ni (0.8-1.4%) and Cr (0.4-0.8%). In selecting the furnace charge, it was established that a reduction from 45-55% to 24-30% of the quantity of coke iron would improve the durability of the metal. It was also found that a reduction in the carbon content from 3.8% to 2.8-3.2% noticeably reduced the transcrystalline structure, thus improving the iron in the working layer of the roller when cooled at the rate of 2.8 degrees per second. The effect of chromium was also tested in the carbon content range of 2.8 to 3.8%, and 1/2

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USSR

KOTESHOV, N. P., et al., Stal', No 1, Jan. 71., p 49

was found to depend on the quantity of carbides in the surface layer of the rollers and on their distribution over the roller cross section.

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BILYK, A. A.

Source: JPRS 60517
13/10/75

CHERNIGOVSHCHINA OIL BASIN NEEDS MORE EXPLORATION

[Excerpt from article by senior drilling foreman A. I. Muray, senior driller foreman A. A. Pavlyachenko, S. V. Tkachishin, chief geologist of Chernigovshchyna trust and Ukrainian SSR Districted Geologist A. A. Bilyk, candidate of Geological and mineralogical sciences, I. M. Lisovsky, secretary of the party committee of the Chernigovshchyna Administration and I. I. Gonts, geologist and special correspondent "A Repetition of the Past" Kiev, Rubochaya Gazeta, Russian, 4 October 1971, p 2]

The troublemakers of the earth's interior -- drillers, prospectors, explorers, and scientists -- are again discussing an urgent problem: why is it that explorational work at Chernigovshchyna does not yield tangible results and oil recovery is reduced? How can these difficulties be overcome and liquid-fuel recovery increased? -- The Economics Club.

The Limit of the Problem

In 1971 the Economics Club of Rubochaya Gazeta's editorial board held a vitalizing meeting. In Pribludni jointly with Ukrainian Association and the Ukrainian SSR Ministry of Geology. The question then concerned mainly the lag in work on geological exploration for oil in Chernigovshchyna, notably, as a result of which the discovery of new fields of liquid fuel had been held back and explored reserves had not been increasing to the extent required.

Two years have since passed, but the situation still has not changed for the better. Therefore a second visiting meeting of the Economics Club of Rubochaya Gazeta's editorial board was held in Pribludni. It was conducted jointly with the Chernigovshchyna Obkom and the Pribludni Gorkom of the Communist

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UDC 621.762:619.018

~~BILYK, I. I.~~ NAVROTSKIY, B. S., and SHARAPOV, V. G., Kiev Polytechnic
Institute

"Cermet Hard Alloys"

Kiev, Akademiya Nauk Ukr SSR, Poroshkovaya Metallurgiya, No 7, Jun 72,
pp 28-33

Abstract: Conditions are investigated for obtaining titanium carbonitrides by synthesis from titanium carbides and nitrides in a Tamman furnace at temperatures of 2000, 2100, and 2200°C in a nitrogen atmosphere. The properties of alloys produced on the basis of titanium carbonitrides mixed with nickel are studied and presented in graphs and tables. The analysis shows that an increase in nitrogen content (up to 13%) in titanium carbonitride alloys leads to an increase in their existence in cutting 20 Kh steel. This is explained by a probable increase in alloy plasticity while retaining relatively high hardness.

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USSR

BILYK, M. G.

"Time of First Contact of a Gaussian Process with a Curve"

Otbor i Peredacha Inform. Resp. Mezhd. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], 1972, No 33, pp 101-104 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V119 by the author).

Translation: An explicit expression is determined for the distribution of probabilities of time of first contact of the continuously differentiable Gaussian process with a curve of the form $A \exp(-\alpha t) - B \exp(-\beta t)$, $A, B, \alpha, \beta > 0$.

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USSR

UDC: 519.2

BILYK, M. G.

"On Using the Doob Representation for the Characteristics of Gaussian Markov Processes"

Otbor i peredacha inform. Resp. mezhved. sb. (Selection and Transmission of Information. Republic Interdepartmental Collection), 1971, vyp. 30, pp 27-32 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V83)

Translation: The author investigates the possibility of solving certain problems for the trajectories of Gaussian Markov processes, using known solutions of analogous problems for the Wiener process. The probability is found that the Wiener process will not leave a region whose boundary is two straight lines within a given time period. Author's abstract.

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USSR

UDC: 519.21

BAKULIN, Yu. D., BILYK, M. G.

"On Some Problems for Trajectories of Gaussian Markov Processes"

V sb. Regional'n. nauch.-tekhn. seminar po statist. analizu, modelir. i avtomatiz. kontrolya ob'yektov s konstruktivno-slozhn. strukturoy (Regional Scientific and Technical Seminar on Statistical Analysis, Modeling and Automation of the Inspection of Objects of Complex Structural Design--collection of works), vyp. 2, Taganrog, 1970, pp 127-131 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V146)

Translation: The authors write out the probability that the stationary Gaussian Markov process $x(t)$, $0 < t < T$, will remain in the region bounded by the curves $f_i(t) = A_i e^{\alpha t} + B_i e^{-\alpha t}$, $i = 1, 2$, where $A_1, B_1 > 0$, $A_2, B_2 < 0$, assuming that $x(0) = 0$. G. Molchan.

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USSR

UDC: 519.21

BILYK, M. G.

"On the Distribution of Probabilities of the Time that a Random Process Will Stay in a Given Region"

Otbor i peredacha inform. Resp. mezhved. sb. (Selection and Transmission of Information. Republic Interdepartmental Collection), 1971, vyp. 28, pp 14-16 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V147)

Translation: The author considers the problem of distribution of the time of stay of a random stationary continuous process in a rectilinear strip. First and second approximations of the distribution function for the time of stay of the random process as well as the average value and variance of the time of stay are determined by the method of time discretization of the process. The results of calculation of the first approximation on the "Mir" computer are presented for various values of the upper and lower bounds of the strip and for a normal stationary random process with correlation coefficient in the form of a Gaussian curve. Author's abstract.

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Acc. Nr:

AP0036750

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

UR 0068

6

* 78550k Preparation of mesitylene and durene by the isomerization and disproportionation of pseudocumene. Kolyandr, L. Ya.; Privalov, V. E.; Fomenko, G. M.; Nikitina, E. A.; Lekshina, L. S.; Kochergin, V. A.; Khvatkov, N. M.; Krish-topa, A. P.; Bilym, L. M.; Grebinnik, Z. G. (Kadiev, Kozso-khim. Zavod, Kadievka, USSR). *Koks Khim.* 1970, (1), 33-40 (Russ). 1,2,4-Me₃C₆H₃ (I) of 90-5% purity was prepd. by rectifying coke chem. solvents (20-35 and 10-20% Me₃C₆H₃, 4-6 and 3-5% *m* + *p*-EtC₆H₄Me, 15-17 and 10-12% 1,3,5-Me₃C₆H₃ (II), 1-1.2 and 0.7-0.9% *o*-EtC₆H₄Me, 16-18 and 12-14% I, 1-2 and 2-3% 1,2,3-Me₃C₆H₃, 2-6 and 1-3% satd. hydrocarbons, and 0 and 2-3% unsatd. compds.) on columns having 50 theoretical plates at a reflux no. of 60-100. Isomerization and disproportionation in the presence of 30% of an AlCl₃-I complex at 127° for 3 hr in exptl. app. yielded 4.00% C₆H₆-PhMe-satd. compds., 17.27% Me₃C₆H₃, 17.02% II, 35.00% I, and 10.71% durene (III). Yields in plant runs were similar. Rectification of the II fraction on a lab. column having 75 theoretical plates at a reflux no. of 80-100 yielded II of 97.5% purity in 39.24% yield. After rectification to increase III concn. to 45.94% in the III fraction, recrystn. at 5 to -18° yielded III of ~82% purity and further recrystn. with 35% PhMe gave III of ~97% purity in ~85% yield (17% selectivity from I and 1.6% from the coke chem. solvent). Lucile S. Davison •

RB

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REEL/FRA
19721671

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PATHOGENESIS OF BURNS AND HOMEOSTASIS -U-
AUTHOR--(G2)-GLANTS, R.H., BILYNSKIY, B.T. *B*
COUNTRY OF INFO--USSR
SOURCE--PROEL GEMATOL PERLLIV KROVI 15(2): 35-40. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PATHOGENESIS, BURN, HOMEOSTASIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0115 STEP NO--UR/9030/70/015/002/0035/0040
CIRC ACCESSION NO--AP0135612
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135612

ABSTRACT/EXTRACT--(U) GP-C-

ABSTRACT. DATA WERE OBTAINED IN THE CLINICAL EXAMINATION OF 312 PATIENTS WITH BURNS OF VARIOUS SEVERITY. THE PATHOGENESIS AND PROTECTION IN THE CLINICAL PICTURE OF BURNS ARE DISCUSSED. ATTENTION IS PAID TO THE ACTIVATION OF SYMPATHIC ADRENAL SYSTEM AND TO THE PARALLEL CHANGES IN THE SYSTEM OF COAGULATION HOMEOSTASIS. THESE CHANGES AND THE IMMUNOLOGICAL SYSTEM ARE MANIFESTATIONS OF PROTECTION. STUDIED OF A NUMBER OF BIOCHEMICAL INDICES POINTED TO DISTURBANCES OF HOMEOSTASIS IN THE 1ST HR AFTER THE BURN. IN THOROUGH DIRECTED EXAMINATION NO CLINICAL MANIFESTATIONS OF SHOCK WERE REVEALED IN 75PERCENT OF THE PATIENTS. THIS INDICATES THE ACTIVITY OF THE MECHANISMS AIDING IN MAINTENANCE OF THE MOST IMPORTANT PARAMETERS WITHIN THE RANGE PROVIDING A SATISFACTORY FUNCTION OF THE VITALLY IMPORTANT ORGANS UNDER CONDITIONS OF THERMIC AFFECTATION. RATIONAL THERAPY OF BURNS SHOULD BE PLANNED WITH CONSIDERATION OF THE FACTORS OF PATHOGENESIS AND PROTECTION. FACILITY: EXP. DEP., LVGV INST. HEMATUL BLOOD TRANSFUS., LVGV, USSR.

UNCLASSIFIED

USSR

UDC 535.8:666.189.2

DOVGIIY, YA. O., BILYY, YA. M., BRILINSKIY, M. I., GNYP, R. G., DMYTRUK, V. I.,
SIMKIN, YU. YE.

"Effect of Fiberglass on the Contrast-Frequency Characteristics of Optical
Systems"

Leningrad, Optika i Spektroskopiya, Vol XXXIV, No 4, 1973, pp 789-791

Abstract: The quality of the image formed by an optical system is determined by its contrast-frequency characteristic or the contrast transmission function $T(N)$. If during transformation of the optical signals their relative intensity (contrast) does not change it is possible to write the equation [F. Perren, Usp. Fiz. Nauk, No 78, 307, 1962]:

$$T_{\text{syst.}}(N) = \prod_i T_i(N)$$

($T_i(N)$ is the contrast-frequency characteristic of the i -th element of the system, N is the spatial frequency). A study was made to determine how fiberglass affects the contrast-frequency characteristic of the system. The fiberglass introduces a contrast distortion and violates the above relation. The degree of the distortions depends on the relations of the fiberglass apertures and the other system elements. The conditions most acceptable for measuring the contrast-frequency characteristics of the fiberglass are as follows:

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DOVGIIY, YA. O., et al., Optika i Spektroskopiya Vol XXXIV, No 4, 1973, pp 789-791

illumination by a collimated beam of uniform cross section using any receiving objective or diffuse illumination jointly with a narrow-aperture objective ($A_{ob} \leq A_{\text{fiberglass}}$).

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USSR

UDC 666.169.212:535.818.7

DOVGII, YA.O., ~~BILYY, YA.M.~~ BRILINSKIY, M.I., GNYP, R.G., DMYTRUK, V.P.,
SIMKIN, YU.YE., STEFANSKIY, I.V. [L'vov State University imeni Ivan Franko]

"Frequency-Contrast Characteristics And Noise Of Fiber Optic Cathodoluminescence
Screens"

Tekhnika kino i televideniya, No 4, Apr 1972, pp 54-55

Abstract: Measurements were made of the frequency-contrast characteristics (FCC) and noise of fiber optic cathodoluminescence screens during their excitation by a static electron beam. The measurements were made by methods developed for measuring the FCC and noise of cathodoluminescence screens with a glass substrate. The principal scheme of the device used for measuring FCC is described and a comparison is made of FCC measured by the micrometric method and with electron excitation. The additive contribution of the glass fiber substrate to the noise characteristics of the screen is shown. 3 ill. 4 ref.

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EAST GERMANY

FLUCK, E., Professor, Dr., REUTERF, P. J., Dr., and BINDER, H., Dr., Institute for Inorganic Chemistry, University (institut fuer Anorganische Chemie der Universitaet), Stuttgart.

"Dithiophosphoric Acid Betaines"

Leipzig, Zeitschrift fuer Anorganische und Allgemeine Chemie, Vol 397, No 3, Apr 73, pp 225-236

Abstract: The synthesis of compounds of the general formula $C_5H_5N-P(S)_2X$, where X denotes F, $N(CH_3)_2$, and Br; the reactions of pyridiniumhalogeno-dithiophosphoric betaines with alcohols; the reactions of pyridinium-fluorodithiophosphoric betaines with hydrohalogenic acids; and the reactions of pyridinium-dithiophosphoric betaines with Lewis bases were described. In addition, methods for the synthesis of pyridiniummethoxyfluoro-, pyridinium-methoxyfluoro-, pyridiniumalkoxyfluoro-, pyridiniumchlorofluoro-dithiophosphates, and trimethylammoniumfluorodithiophosphoric betaine was described. The chemical shifts, coupling constants, and other structural characteristics of the compounds synthesized were presented on the basis of nuclear magnetic resonance spectrometric data. Twelve references, including 4 German and 8 Western. (Manuscript received 23 Oct 72).

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1/2 012
TITLE--CONTINUOUS DISCHARGE OF SLAG FROM A LEAD FURNACE AT THE
ELEKTROTSINK PLANT -U-
AUTHOR-(03)-SAUTIYEV, T.D., ALIKOV, A.B., BINDER, S.I.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(4), 42-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LEAD ORE, METALLURGIC PLANT, EXTRACTIVE METALLURGY,
METALLURGIC SLAG, METALLURGIC FURNACE, SMELTING FURNACE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0116
CIRC ACCESSION NO--AP0132409
STEP NO--UR/0136/70/043/004/0042/0044
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132409

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CONTINUOUS DISCHARGE OF A SLAG OF
COMP. FEO 28.5-36.3, CAO 11.87-17.9, AND SIO SUB2 20.6-22.1PERCENT
LEADS TO SMOOTHER OPERATION OF THE SHAFT FURNACE, IMPROVES THE
FUNCTIONING OF THE TUYERES OPPOSITE THE SLAG TAPPING HOLE, SO THAT THE
FURNACE BEINGS TO OPERATE ACTIVELY OVER THE WHOLE SECTION, AND
CONSIDERABLY IMPROVES THE WORKING CONDITIONS. WITH LIME SLAG,
CONTINUOUS OPERATION INCREASES THE RATE OF SMELTING BY 7 TON-M
PRIME2-DAY, REDUCES THE AMT. OF DUST, AND REDUCES FUEL CONSUMPTION.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV7C
TITLE--SPECTRAL PROPERTIES OF DYSPROSIUM ION (DY PRIME3POSITIVE) IN A
YTTRIUM ALUMINUM GARNET LATTICE -U-
AUTHOR-(04)-AZANATOV, Z.T., ARSENYEV, P.A., BINERT, K.E., CHUKICHEV, M.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 76-80
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--SPECTROSCOPY, DYSPROSIUM, YTTRIUM COMPOUND, ALUMINUM COMPOUND,
CRYSTAL LATTICE STRUCTURE, LUMINESCENCE, GARNET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0958 STEP NO--UR/0139/70/013/002/0076/0080
CIRC ACCESSION NO--AT0105827
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0105827

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ABSORPTION AND LUMINESCENCE SPECTRA OF DY PRIME3 POSITIVE IN A Y-AL GARNET IN LIQ. N WERE DETD. FROM THE DATA THE DIAGRAM OF THE ENERGY LEVELS PRIME4 F SUB9HALVES, PRIME6 F SUBONEHALVE PRIME6 F SUB3HALVES, PRIME6 F SUBSEVENHALVES, AND PRIME6 F SUBFIFTEENHALVES WAS DERIVED.

UNCLASSIFIED

USSR

UDC 612.821.7

ROTENBERG, V. S. and BINIAURISHVILI, R. G., Department of Clinical Neurophysiology, Central Scientific Research Laboratory, First Moscow Medical Institute

"Psychophysiological Investigations in Night Sleep"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 864-871

Abstract: In order to study the interconnections between various parameters of rapid sleep and subjective reports on awakening from it, as well as the psychic activity in rapid and delta sleep 6 healthy and 24 disturbed-sleep subjects were studied pulsographically while awake and sleeping, awakened during rapid and delta sleep and questioned as to sleep perception and dreams. The ability to give detailed reports of dreams was found to correlate with a faster pulse rate in rapid sleep than delta sleep and with awareness of sleep in delta sleep, but not with rapid eye movement (REM) intensity. In disturbed patients the lack of ability to report dreams or their negation was correlated with lack of faster pulse in rapid sleep together with low REM intensity. Negation of previous sleep in disturbed

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USSR

ROTENBERG, V. S. and BINIAURISHVILI, R. G., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 864-871

subjects was more common in delta sleep. A longer period of alertness was observed after awakening from rapid sleep, than delta. The lack of ability to describe dreams seen in the disturbed patients is suggested to have two causes, either a paucity and insignificance of dream content or dream repression. The first cause, characterized by slower pulse and less REM, indicates a functional insufficiency of rapid sleep suggested to be related to neurotic defense mechanisms, while the second would be accompanied by normal characteristics.

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USSR

UDC: 681.327.12

BINKAUSKAS, B.-Yu. B., KIINA, A. A., Institute of Physics and Mathematics,
Academy of Sciences of the Lithuanian SSR

"A Device for Shaping Synchronizing Pulses in Reading Out Information From
a Magnetic Tape"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 3, Jan 71, Author's Certificate No 291193, Division G, filed 18 Apr 69,
published 6 Jan 71, pp 117-118

Translation: This Author's Certificate introduces a device for shaping
synchronizing pulses in reading out information from a magnetic tape. The
device is based on Author's Certificate No 225549. As a distinguishing
feature of the patent, the output synchronizing pulses are brought closer
into phase with the input signals by using an adder module with its input
connected to the output of the time discriminator, while the adder module
output is connected to the input of the de-emphasizer.

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Converters

USSR

UDC 621.317.373

BINKAUSKAS, B. Yu. B., KILNA, A. A., and VEYVERIS, G. P., Institute of
Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Converter Which Transforms Phase Shift to Digital Code"

Moscow, Otkryitya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 35, Soviet Patent No 287194, class 21, filed 16 Jun 69, published
19 Nov 70, p 83

Translation: This Author's Certificate introduces a converter which trans-
forms phase shift to digital code. The device contains reference and
phase-keyed signal pulse shapers, flip-flops, diodes, a counter, a switch
and an automatic frequency control circuit made up of a time discriminator,
a controllable delay line, a diode and a scaling circuit. The output of
the diode in the automatic frequency control circuit is connected to the
input of the controllable delay line through an OR circuit. As a dis-
tinguishing feature of the patent, accuracy is improved by adding a second
automatic frequency control circuit whose input is connected to the output
of the phase-keyed signal pulse shaper, while the output of the extra AFC
circuit is connected to the input of the switch.

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USSR

UDC 621.391:519.2

B
BINSHTOK, V. B., SKORLPSKAYA, L. P.

"Synthesis of a Signal which Maximizes the Signal/Noise Ratio at the Output of a Matched Filter"

Tr. Mosk. Elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 6-9 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A38)

Translation: The problem of synthesis of a signal insuring a maximum signal/noise ratio at the output of a matched filter is solved under the assumption that the noise is distributed uniformly with respect to range, and arbitrarily with respect to frequency. The problem is connected with reception of the signal from the target against a background of extended interference the intensity of which is much greater than the noise intensity. The bibliography has three entries.

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USSR

BINYUKOV, V. I., et al., Biokhimiya, Vol 36, No 6, Nov/Dec 71, pp 1149-1155

temperatures suggest that high temperature induces conformational transformations in the protein fraction, and these induce structural transformations in the lipid fraction of bacterial membranes.

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USSR

UDC 576.341

BINYUKOV, V. I., ZHUKOVA, I. G., and OSTROVSKIY, D. N., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow

"Evaluation of the Secondary Structure of Proteins of Bacterial Membranes on the Basis of Infrared Spectroscopy Data"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 6, 1971, pp 1,457-1,460

Abstract: The structural organization of protein in *Micrococcus lysodeikticus* and *Escherichia coli* membranes was studied through the infrared spectroscopy of dry films and also on the basis of the $H \rightleftharpoons D$ exchange rate in moist preparations of intact and defatted membranes. The reason for the study was the small amount of information on the state of basic components of biological lipoprotein membranes. It is noted that the application of many physical methods such as nuclear magnetic resonance and infrared spectroscopy has shown that proteins in membranes of different origins are in an α -spiral and disordered tangle state and that the β -form is apparent only under special conditions. Bacterial membranes were previously studied only in a paper by Lenard and Singer in 1966, who observed that the parameters of optical rotatory dispersion and circular dichroism of membranes of *Bac. subtilis* are very similar to the parameters for erythrocytes. This was

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1/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--WAYS AND METHODS OF REHABILITATION OF INVALIDS WITH A PATHOLOGY OF
THE ORGAN OF VISION IN BYELORUSSIA -U-

AUTHOR-(03)-BIRICH, T.V., BIRAN, V.P., PISARENKO, D.K.

COUNTRY OF INFO--USSR

SOURCE--ZDRAVGOOKHRANENIYE BELORUSSI, 1970, NR 4, PP 86-89

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, BLINDNESS, REHABILITATION, GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1851

STEP NO--UR/0477/70/000/004/0086/0089

CIRC ACCESSION NO--AP0129211

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129211

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A SUCCESSFUL RESOLUTION OF THE PROBLEM OF REHABILITATION OF INVALIDS WITH AN EYE PATHOLOGY TO A CERTAIN DEGREE DEPENDS UPON AN INSUFFICIENT REGISTRATION OF THE BLIND AND THE CAUSE OF BLINDNESS AND EYE WEAKNESS, AND ALSO PERFECTION OF THE METHODS OF MEDICAL PROFESSIONAL REHABILITATION OF INVALIDS DUE TO THE VISUAL ORGAN PATHOLOGY. SPECIAL ATTENTION HAS BEEN DRAWN TO A THOROUGH STUDY OF BLINDNESS AND EYE WEAKNESS IN CHILDREN AND ALSO TO THE PROBLEM OF RATIONAL WORK SUPPLY OF THE THIRD GROUP INVALIDS. FACILITY: KAFEDRA GLAZNYKH BOLEZNEY MINSK. MED. INST. AND N-I LABORATORIYA EKSPERTIZY TRUDOSPOSOBNOSTI INVALIDOV TRUDA MINISTERSTVA SOTSIAL. OBESPECHENIYA BSSR.

UNCLASSIFIED

1/2 022
TITLE--ANTIANALOGS AND GAMMA UNCLASSIFIED PROCESSING DATE--16OCT70
AUTHOR--BIRBRAYR, B.L. DECAY OF ANALOG STATES -U-
COUNTRY OF INFO--USSR *B*
SOURCE--ZH. EKSP. TEOR. FIZ. 1970, 11(1), 60-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--EVEN EVEN NUCLEUS, QUANTUM MECHANICS, NUCLEAR STRUCTURE,
PHOTON EMISSION, GAMMA RAY, PROTON BOMBARDMENT, RADIOACTIVE DECAY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0680 STEP NO--UR/0386/70/011/001/0060/0064
CIRC ACCESSION NO--AP0105656
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL INVESTIGATION OF THE QUANTUM MECH. SYSTEM FORMED BY ADDN. OF A P TO EVEN EVEN TARGET NUCLEI WITH FORMATION OF STATES WITH 2 ISOSPIN VALUES, SHOWED THAT THE STUDY OF GAMMA DECAYS OF ANALOGS ANTIANALOGS COULD GIVE INFORMATION ABOUT THE NUCLEAR STRUCTURE. THIS KIND OF INFORMATION WAS NEVER LESS THAN INFORMATION GAINED BY NUCLEAR REACTIONS, SINCE IT WAS FREE FROM THE UNCERTAINTIES INHERENT TO THEIR MECHANISMS.

UNCLASSIFIED

1/2 CC9
TITLE--ANTI ANALOGS AND GAMMA DECAY OF ANALOG STATES -U-
AUTHOR--BIRBRAIR, B.L. **B**
COUNTRY OF INFO--USSR
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 60-4, JAN. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GAMMA TRANSITION, NUCLEAR STRUCTURE, NUCLEAR ENERGY LEVEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1748
CIRC ACCESSION NO--AP0133653
STEP NO--US/0000/70/011/001/0060/0064
UNCLASSIFIED

2/2 CC9

CIRC ACCESSION NO--AP0133653

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. P. 38-41 IT IS SHOWN THAT ANALOG

ANTIANALOG GAMMA TRANSITIONS PROVIDE A SOURCE OF UNIQUE INFORMATION

CONCERNING THE STRUCTURE OF NUCLEAR STATES.

FACILITY: USSR ACAD.

SCIS.

UNCLASSIFIED

USSR

BIRBRAYER, V. M. and TRETYAK, V. I.

"Selective Information Service for Supervisory Personnel"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1 - Organizatsiya i Metodika Informatsionnoy Raboty, January 1973, pp 19-23

Abstract: The authors analyze the operation, during 1970-1971, of a subject information service for supervisory personnel developed by the Ukrainian Institute for Scientific and Technical Information of the Ukrainian State Planning Commission.

The system is designed to provide bibliographic, documentary, analytical, and synthetic information, as well as key foreign information. The form and complexity of an information service for supervisory personnel of directory and planning agencies are discussed. The need is shown for setting up a special information service for supervisory personnel within the framework of the existing information agency. Further means for improving the information system for supervisory personnel are suggested.

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USSR

BIRBRAYER, V. M. and TRETYAK, V. I., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1 - Organizatsiya i Metodika Informatsionnoy Raboty, January 1973, pp 19-23

The article includes two flow charts: one showing the provision of bibliographic and documentary information and the other showing the subject information service for supervisory personnel.

There are four bibliographic references.

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